Contents for Volume 35, 2003

Editors of *Arctic, Antarctic, and Alpine Research*	iii–iv	Kathleen A. Salzberg: Many Thanks!
Koichi Takahashi	1–7	Effects of Climatic Conditions on Shoot Elongation of Alpine Dwarf Pine (*Pinus pumila*) at Its Upper and Lower Altitudinal Limits in Central Japan
Petr Sklenář and Simon Lægaard	8–17	Rain-Shadow in the High Andes of Ecuador Evidenced by Páramo Vegetation
Jasmine E. Saros, Sebastian J. Interlandi, Alexander P. Wolfe, and Daniel R. Engstrom	18–23	Recent Changes in the Diatom Community Structure of Lakes in the Beartooth Mountain Range, U.S.A.
Robert Gilbert, Åsa Chong, Robert B. Dunbar, and Eugene W. Domack	23–33	Sediment Trap Records of Glacimarine Sedimentation at Müller Ice Shelf, Lallemand Fjord, Antarctic Peninsula
D. Tscherko, M. Bölter, L. Beyer, J. Chen, J. Elster, E. Kandeler, D. Kuhn, and H. P. Blume	34–47	Biomass and Enzyme Activity of Two Soil Transects at King George Island, Maritime Antarctica
Fabien Anthelme, Richard Michalet, Luc Barbaro, and Jean-Jacques Brun	48–55	Environmental and Spatial Influences of Shrub Cover (*Alnus viridis* DC.) on Vegetation Diversity at the Upper Treeline in the Inner Western Alps
V. M. Makeyev, D. P. Ponomareva, V. V. Pitulko, G. M. Chernova, and D. V. Solovyeva	56–66	Vegetation and Climate of the New Siberian Islands for the Past 15000 Years
Gregory C. Wiles, Ryan P. McAllister, Nicole K. Davi, and Gordon C. Jacoby	67–73	Eolian Response to Little Ice Age Climate Change, Tana Dunes, Chugach, Mountains, Alaska, U.S.A.
Peter Q. Olsson, Matthew Sturm, Charles H. Racine, Vladimir Romanovsky, and Glen E. Liston	74–81	Five Stages of the Alaskan Arctic Cold Season with Ecosystem Implications
D. M. McClung	82–90	Magnitude and Frequency of Avalanches in Relation to Terrain and Forest Cover
Michael N. Gooseff, J. E. Barrett, Peter T. Doran, Andrew G. Fountain, W. Berry Lyons, Andrew N. Parsons, Dorota L. Porazinska, Ross A. Virginia, and Diana H. Wall	91–99	Snow-Patch Influence on Soil Biogeochemical Processes and Invertebrate Distribution in the McMurdo Dry Valleys, Antarctica
Marion Klaus	100–109	The Status, Habitat, and Response to Grazing of Water Vole Populations in the Big Horn Mountains of Wyoming, U.S.A.
Kathleen Rühland, Alisha Priesnitz, and John P. Smol	110–123	Paleolimnological Evidence from Diatoms for Recent Environmental Changes in 50 Lakes across Canadian Arctic Treeline
Book Review	124	*The Arctic Voyages of Martin Frobisher: An Elizabethan Adventure*. By Robert McGhee.
Olga Solomina and Parker E. Calkin	129–143	Lichenometry as Applied to Moraines in Alaska, U.S.A., and Kamchatka, Russia

Contents for Volume 35, 2003

Editors of *Arctic, Antarctic, and Alpine Research*	iii–iv	Kathleen A. Salzberg: Many Thanks!
Koichi Takahashi	1–7	Effects of Climatic Conditions on Shoot Elongation of Alpine Dwarf Pine (*Pinus pumila*) at Its Upper and Lower Altitudinal Limits in Central Japan
Petr Sklenář and Simon Lægaard	8–17	Rain-Shadow in the High Andes of Ecuador Evidenced by Páramo Vegetation
Jasmine E. Saros, Sebastian J. Interlandi, Alexander P. Wolfe, and Daniel R. Engstrom	18–23	Recent Changes in the Diatom Community Structure of Lakes in the Beartooth Mountain Range, U.S.A.
Robert Gilbert, Åsa Chong, Robert B. Dunbar, and Eugene W. Domack	23–33	Sediment Trap Records of Glacimarine Sedimentation at Müller Ice Shelf, Lallemand Fjord, Antarctic Peninsula
D. Tscherko, M. Bölter, L. Beyer, J. Chen, J. Elster, E. Kandeler, D. Kuhn, and H. P. Blume	34–47	Biomass and Enzyme Activity of Two Soil Transects at King George Island, Maritime Antarctica
Fabien Anthelme, Richard Michalet, Luc Barbaro, and Jean-Jacques Brun	48–55	Environmental and Spatial Influences of Shrub Cover (*Alnus viridis* DC.) on Vegetation Diversity at the Upper Treeline in the Inner Western Alps
V. M. Makeyev, D. P. Ponomareva, V. V. Pitulko, G. M. Chernova, and D. V. Solovyeva	56–66	Vegetation and Climate of the New Siberian Islands for the Past 15000 Years
Gregory C. Wiles, Ryan P. McAllister, Nicole K. Davi, and Gordon C. Jacoby	67–73	Eolian Response to Little Ice Age Climate Change, Tana Dunes, Chugach, Mountains, Alaska, U.S.A.
Peter Q. Olsson, Matthew Sturm, Charles H. Racine, Vladimir Romanovsky, and Glen E. Liston	74–81	Five Stages of the Alaskan Arctic Cold Season with Ecosystem Implications
D. M. McClung	82–90	Magnitude and Frequency of Avalanches in Relation to Terrain and Forest Cover
Michael N. Gooseff, J. E. Barrett, Peter T. Doran, Andrew G. Fountain, W. Berry Lyons, Andrew N. Parsons, Dorota L. Porazinska, Ross A. Virginia, and Diana H. Wall	91–99	Snow-Patch Influence on Soil Biogeochemical Processes and Invertebrate Distribution in the McMurdo Dry Valleys, Antarctica
Marion Klaus	100–109	The Status, Habitat, and Response to Grazing of Water Vole Populations in the Big Horn Mountains of Wyoming, U.S.A.
Kathleen Rühland, Alisha Priesnitz, and John P. Smol	110–123	Paleolimnological Evidence from Diatoms for Recent Environmental Changes in 50 Lakes across Canadian Arctic Treeline
Book Review	124	*The Arctic Voyages of Martin Frobisher: An Elizabethan Adventure*. By Robert McGhee.
Olga Solomina and Parker E. Calkin	129–143	Lichenometry as Applied to Moraines in Alaska, U.S.A., and Kamchatka, Russia

William D. Bowman, Leslie Bahn, and Mary Damm	144–149	Alpine Landscape Variation in Foliar Nitrogen and Phosphorus Concentrations and the Relation to Soil Nitrogen and Phosphorus Availability
Lars Edenius, Coomaren P. Vencatasawmy, Per Sandström, and Ulrika Dahlberg	150–157	Combining Satellite Imagery and Ancillary Data to Map Snowbed Vegetation Important to Reindeer *Rangifer tarandus*
Willy Tinner and Jean-Paul Theurillat	158–169	Uppermost Limit, Extent, and Fluctuations of the Timberline and Treeline Ecocline in the Swiss Central Alps during the Past 11,500 Years
Satoru Yamaguchi, Renji Naruse, Takane Matsumoto, and Hiroshi Ohno	170–174	Multiday Variations in Flow Velocity at Glaciar Soler, Northern Patagonia, Chile
Ólafur Ingólfsson, Christian Hjort, and Ole Humlum	175–186	Glacial and Climate History of the Antarctic Peninsula since the Last Glacial Maximum
Stéphane Boudreau, Serge Payette, Claude Morneau, and Serge Couturier	187–195	Recent Decline of the George River Caribou Herd as Revealed by Tree-Ring Analysis
Amalava Bhattacharyya and Vandana Chaudhary	196–202	Late-Summer Temperature Reconstruction of the Eastern Himalayan Region Based on Tree-Ring Data of *Abies densa*
Daniel P. McCarthy	203–213	Estimating Lichenometric Ages by Direct and Indirect Measurement of Radial Growth: A Case Study of *Rhizocarpon* Agg. at the Illecillewaet Glacier, British Columbia
Rolf Holderegger, Ivana Stehlik, Ronald I. Lewis Smith, and Richard J. Abbott	214–217	Populations of Antarctic Hairgrass (*Deschampsia antarctica*) Show Low Genetic Diversity
John T. Andrews and Gudrun Helgadóttir	218–232	Late Quaternary Ice Cap Extent and Deglaciation, Húnaflóaáll, Northwest Iceland: Evidence from Marine Cores
Ørjan Totland and Björn Schulte-Herbrüggen	242–247	Breeding System, Insect Flower Visitation, and Floral Traits of Two Alpine *Cerastium* Species in Norway
Stephan R. P. Halloy and Alan F. Mark	248–254	Climate-Change Effects on Alpine Plant Biodiversity: A New Zealand Perspective on Quantifying The Threat
Guglielmina Diolaiuti, Carlo D'Agata, and Claudio Smiraglia	255–263	Belvedere Glacier, Monte Rosa, Italian Alps: Tongue Thickness and Volume Variations in the Second Half of the 20th Century
Jon Ove Hagen, Kjetil Melvold, Francis Pinglot, and Julian A. Dowdeswell	264–270	On the Net Mass Balance of the Glaciers and Ice Caps in Svalbard, Norwegian Arctic
Bianca B. Perren, Raymond S. Bradley, and Pierre Francus	271–278	Rapid Lacustrine Response to Recent High Arctic Warming: A Diatom Record from Sawtooth Lake, Ellesmere Island, Nunavut
Peter Rosén, Ulf Segerström, Lars Eriksson, and Ingemar Renberg	279–290	Do Diatom, Chironomid, and Pollen Records Consistently Infer Holocene July Air Temperature? A Comparison Using Sediment Cores from Four Alpine Lakes in Northern Sweden
Kenneth M. Hinkel, Wendy R. Eisner, James G. Bockheim, Frederick. E. Nelson, Kim M. Peterson, and Xiaoyan Dai	291–300	Spatial Extent, Age, and Carbon Stocks in Drained Thaw Lake Basins on the Barrow Peninsula, Alaska
Søren Rysgaard, Torben Vang, Michael Stjernholm, Bjarke Rasmussen, Anders Windelin, and Sissi Kiilsholm	301–312	Physical Conditions, Carbon Transport, and Climate Change Impacts in a Northeast Greenland Fjord

L. E. Brown, D. M. Hannah, and A. M. Milner	313–322	Alpine Stream Habitat Classification: An Alternative Approach Incorporating the Role of Dynamic Water Source Contributions
Andrew G. Bunn, Rick L. Lawrence, Gabriel J. Bellante, Lindsey A. Waggoner, and Lisa J. Graumlich	323–330	Spatial Variation in Distribution and Growth Patterns of Old Growth Strip-Bark Pines
J. G. Bockheim, J. D. O'Brien, J. S. Munroe, and K. M. Hinkel	331–340	Factors Affecting the Distribution of *Populus balsamifera* on the North Slope of Alaska, U.S.A.
Sylvi M. Sandvik and Einar Heegaard	341–348	Effects of Simulated Environmental Changes on Growth and Growth Form in a Late Snowbed Population of *Pohlia wahlenbergii* (Web. et Mohr) Andr
M. Dawn Pier, Alexandra A. Betts-Piper, Christopher C. Knowlton, Barbara A. Zeeb, and Kenneth J. Reimer	349–360	Redistribution of Polychlorinated Biphenyls from a Local Point Source: Terrestrial Soil, Freshwater Sediment, and Vascular Plants as Indicators of the Halo Effect
Franziska Keller and Christian Körner	361–368	The Role of Photoperiodism in Alpine Plant Development
Elisabeth J. Cooper and Philip A. Wookey	369–376	Floral Herbivory of *Dryas octopetala* by Svalbard Reindeer
Atsushi Kume, Yukiko S. Bekku, Yuko T. Hanba, and Hiroshi Kanda	377–383	Carbon Isotope Discrimination in Diverging Growth Forms of *Saxifraga oppositifolia* in Different Successional Stages in a High Arctic Glacier Foreland
Nicoletta Cannone and Renato Gerdol	384–390	Vegetation as an Ecological Indicator of Surface Instability in Rock Glaciers
Brandon D. Beierle, Derald G. Smith, and Leonard V. Hills	391–398	Late Quaternary Glacial and Environmental History of the Burstall Pass Area, Kananaskis Country, Alberta, Canada
Ulrike Nickus	399–408	Ion Content of the Snowpack on Franz Josef Land, Russia
Book Reviews	409–410	*Plant Life of the Quaternary Cold Stages: Evidence from the British Isles*. By Richard G. West. *Lichens of Antarctica and South Georgia: A Guide to their Identification and Ecology*. By D. O. Øvstedal and R. I. Lewis Smith.
O. Buchner and G. Neuner	411–420	Variability of Heat Tolerance in Alpine Plant Species Measured at Different Altitudes
Daniel F. Doak and Michael G. Loso	421–428	Effects of Grizzly Bear Digging on Alpine Plant Community Structure
Yan B. Linhart and Janet L. Gehring	429–433	Genetic Variability and Its Ecological Implications in the Clonal Plant *Carex scopulorum* Holm. in Colorado Tundra
S. Dullinger, T. Dirnböck, and G. Grabherr	434–441	Patterns of Shrub Invasion into High Mountain Grasslands of the Northern Calcareous Alps, Austria
N. J. M. Gremmen, V. R. Smith, and O. F. R. van Tongeren	442–446	Impact of Trampling on the Vegetation of Subantarctic Marion Island
L. D. Llambí, M. Fontaine, F. Rada, B. Saugier, and L. Sarmiento	447–453	Ecophysiology of Dominant Plant Species during Old-Field Succession in a High Tropical Andean Ecosystem
Takuo Nagaike	454–459	Edge Effects on Stand Structure and Regeneration in a Subalpine Coniferous Forest on Mt. Fuji, Japan, 30 Years after Road Construction

Mary E. Edwards, Thomas D. Hamilton, Scott A. Elias, Nancy H. Bigelow, and Andrea P. Krumhardt	460–468	Interglacial Extension of the Boreal Forest Limit in the Noatak Valley, Northwest Alaska: Evidence from an Exhumed River-Cut Bluff and Debris Apron
Carl A. Reese, Kam-biu Liu, and Keith R. Mountain	469–474	Pollen Dispersal and Deposition on the Ice Cap of Volćan Parinacota, Southwestern Bolivia
Barbara Landl, Helgi Björnsson, and Michael Kuhn	475–481	The Energy Balance of Calved Ice in Lake Jökulsarlon, Iceland
J. Graham Cogley and M. S. McIntyre	482–488	Hess Altitudes and Other Morphological Estimators of Glacier Equilibrium Lines
Jeffrey S. Munroe	489–498	Estimates of Little Ice Age Climate Inferred through Historical Rephotography, Northern Uinta Mountains, U.S.A.
Brenda Moraska Lafrancois, Koren R. Nydick, and Bethany Caruso	499–508	Influence of Nitrogen on Phytoplankton Biomass and Community Composition in Fifteen Snowy Range Lakes (Wyoming, U.S.A.)
Darlene S. S. Lim and Marianne S. V. Douglas	509–519	Limnological Characteristics of 22 Lakes and Ponds in the Haughton Crater Region of Devon Island, Nunavut, Canadian High Arctic
D. Mazzucchi, I. S. Spooner, R. Gilbert, and G. Osborn	520–529	Reconstruction of Holocene Climate Change Using Multiproxy Analysis of Sediments from Pyramid Lake, British Columbia, Canada
Michael A. Rawlins and Cort J. Willmott	530–537	Winter Air Temperature Change over the Terrestrial Arctic, 1961–1990
Errata	538–539	
Book Reviews	540–541	*In the Teeth of the Wind: South through the Pole*. By Alain Hubert and Dixie Dansercoer. *William Bradford: Sailing Ships and Arctic Seas*. By Richard C. Kugler, with contributions from Eric A. R. Ronnberg Jr., Adam Greenhalgh, and R. M. Riefstahl. *Sea Ice: An Introduction to Its Physics, Chemistry, Biology and Geology*. Edited by D. N. Thomas and G. Dieckmann.